

## ABSTRACT OF THE DISCLOSURE

This debugging method exhaustively analyzes the impact of any set of given interrelated signal values in a digital circuit on the circuit's ability to satisfy a set of functional expectations. It accomplishes this automatically by inspecting paths in a binary decision diagram representation of the logical relationship between the signal values in the circuit. As the result, it is able to list all combinations of desirable values on these given signals, and therefore it can conclusively identify which signals are irrelevant and which signals are always involved while other signals are involved under certain known conditions.